[For the Program Managers Website, 253 words]

# Managing External Relations — The Lifeblood of Mission Success

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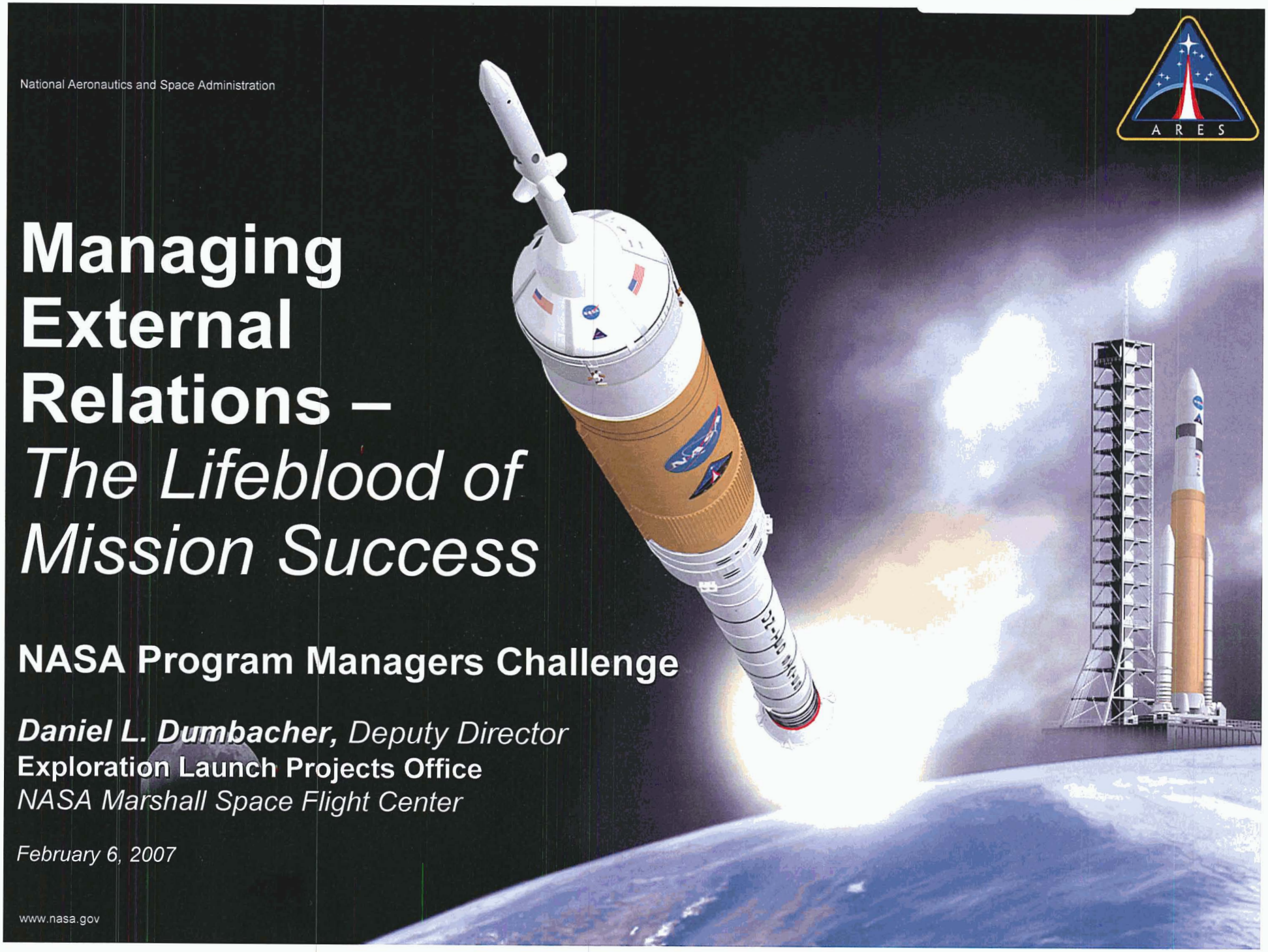
## Abstract

As one reflects on the last two decades of managing NASA launch vehicle projects, a pattern of success emerges against a backdrop of missteps and redirections, as the Agency has transformed through three NASA administrators and three presidential administrations. Throughout times of accomplishment and disappointment, managing external relations has been a constant necessity that, like cable TV, has many competing channels. This briefing will discuss an approach to project success by effectively communicating with those who have a vested interest in the work at hand to keep resources flowing. In the 1990s, I was fortunate to develop an experimental vehicle, proving that a spacecraft could be turned around for reflight within 2 days. Then, with a change of administrations, a NASA- and industry-wide effort known as the Space Launch Initiative was established, where reusable launch vehicles were designed while complementary technologies were developed. These experiences taught us that managing relationships with NASA's multiple customers and stakeholders — including Congress, media, professional organizations, advocacy groups, and the public — is an important component for mission success. Now, the Agency is united behind the Vision for Space Exploration, with strategic goals that have great national significance. Those of us working to develop a new generation of safe, reliable, and affordable launch vehicles recognize that exceeding customer and stakeholder requirements demands that a variety of external audiences be engaged with timely, accurate, and compelling information. Understanding what adds value is vital to managing external relations in ways that provide mutual benefits and real value to all.

[For the Program Managers Conference's printed program, 55 words]

Many launch vehicle development efforts have been attempted over the last two decades as the Agency has transformed through three NASA administrators and three presidential administrations. Understanding and managing external stakeholder and customer requirements, and clearly communicating with those who have a vested interest in the work at hand, reduces risk and promotes mission success.

National Aeronautics and Space Administration




# Managing External Relations – *The Lifeblood of Mission Success*

## NASA Program Managers Challenge

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# Agenda


- Customers and Stakeholders
- Agency Transformation
- Overview: Projects and Programs Experience
- An Approach to Project Success:

  *Communicate, Communicate, Communicate*

# Customers and Stakeholders

- Astronauts
- NASA Centers
- NASA HQ
- Congress
- Media
- Professional Organizations (AIAA, etc.)
- Advocacy Groups (NSS, etc.)
- The Public

Johnson

Marshall

Glenn

Goddard

Stennis

Ames

Langley

MAF

Kennedy

JPL

Dryden

AIAA

National Space Society

Pratt & Whitney
A United Technologies Company

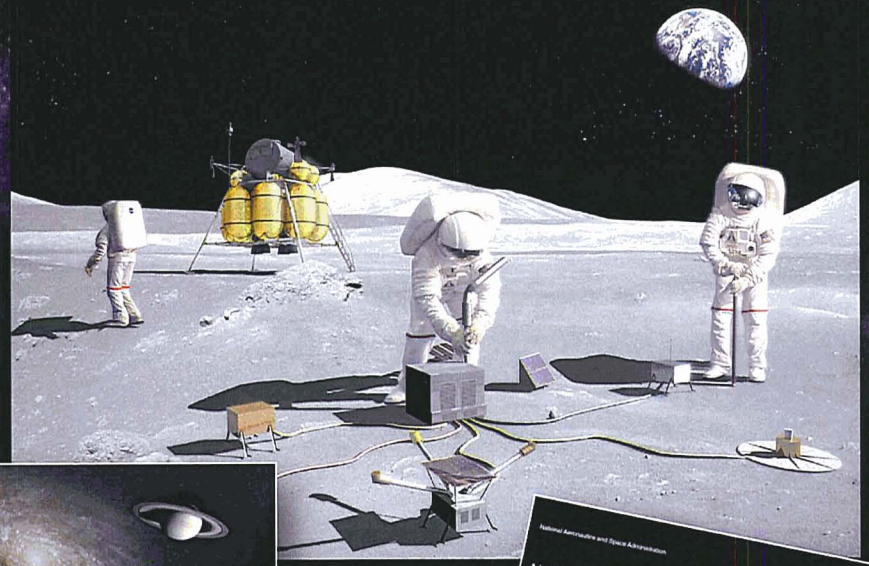
ATK
ALLIANT TECHSYSTEMS

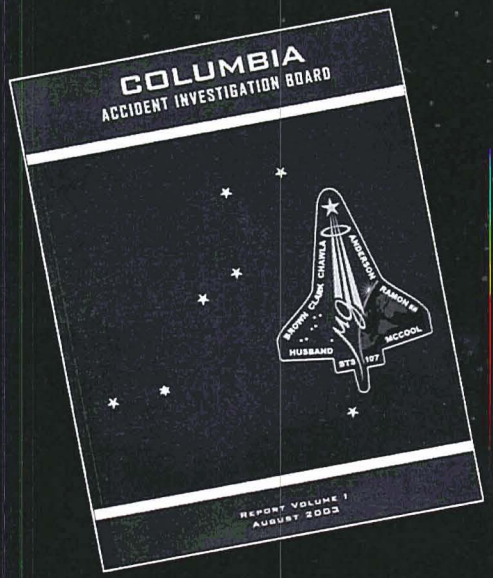
LOCKHEED MARTIN

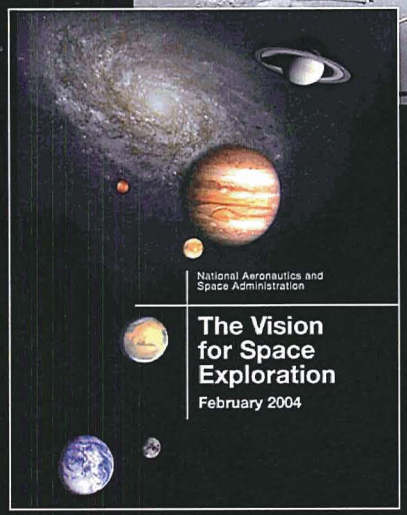
***External Relations Take Many Forms, Including Some That May Not Be Obvious.***

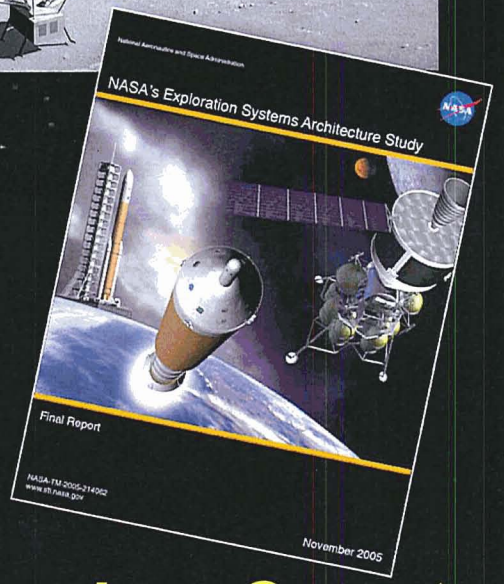
# Agency Transformation: Vision for Space Exploration

- Political Environment
- Management Philosophy
- Technical Focus






***Current Climate is Supportive. Change is a Constant.***

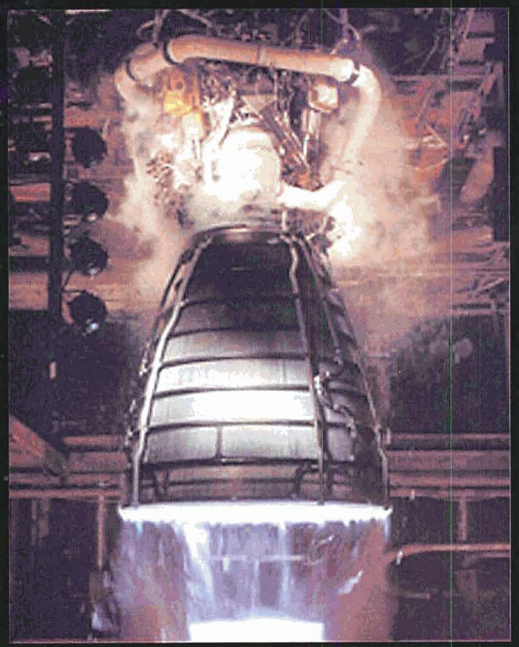
# Overview: Projects and Programs Experience


- Space Shuttle Main Engine
- DC-XA Flight Demonstrator
- X-33 Flight Demonstrator
- Space Launch Initative/2nd Generation Reusable Launch Vehicle
- X-37 Flight Demonstrator
- Constellation (pre Dr. Griffin)
- Safety & Mission Assurance
- Exploration Launch Projects

***Drawing on Extensive Lessons Lived… and Learning New Ones.***

# Space Shuttle Main Engine System

- **Positions:**
  - Performance Analyst, 1981
  - Alternate Turbopump Chief Engineer, 1987
  - Technology Test-Bed Manager, 1989
  - Shuttle Program/SSME Project Office Manager, 1991-94

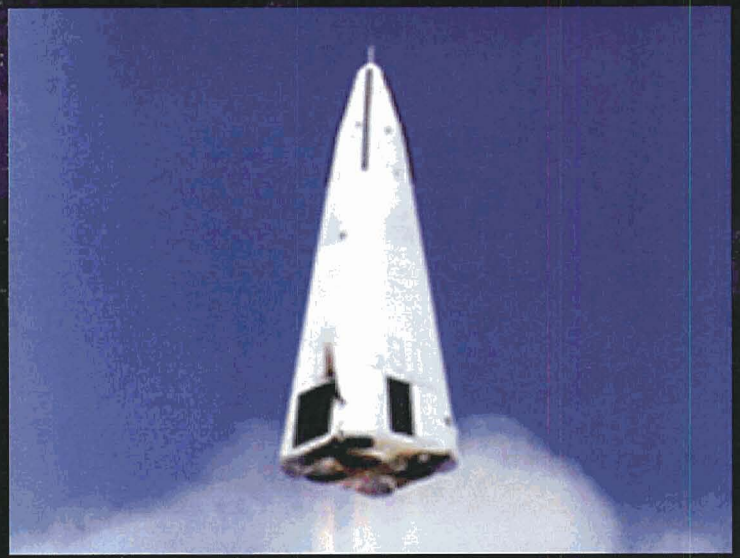


- **Technical Accomplishments:**
  - Assessed Hardware
  - Supported Real-Time Launch Decisions
  - Integrated Technical Concepts
  - Initiated Test Activities
  - Developed Project Plans/Resource Requirements

**Management Lesson:**
***Learn how to work with other members of the team.***

# DC-XA Flight Demonstrator

- **Positions:**
  - Chief Engineer, 1994
  - Manager, 1995

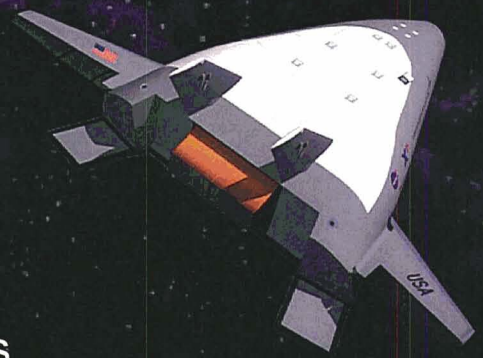


- **Technical Accomplishments:**
  - Developed and Tested New Launch Vehicle Technologies
  - Exceeded Technical Requirements (2 Flight Tests in 26 Hours)
  - Completed Flight Tests on Schedule; Under Ran Budget by 10%

**Management Lesson:**

***Recognize that there are customers and stakeholders outside of your home Center, such as NASA HQ and the Media.***

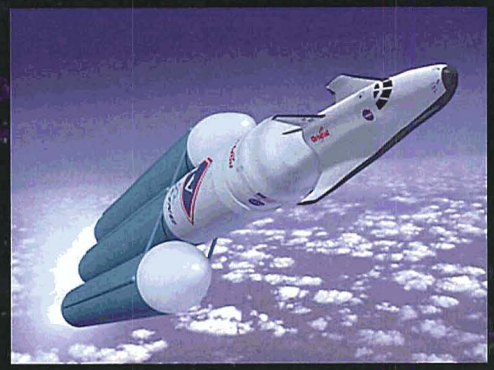
# X-33 Flight Demonstrator Program



- **Position:**
  - Deputy Manager, 1996
- **Technical Accomplishments:**
  - Developed Concept to Critical Design Review
  - Demonstrated New Launch Vehicle Technologies
    - Metallic thermal protection system
    - Aerospike engine
    - Composite structures

**Management Lesson:**
***Partnerships are tough and depend on how you do things.***

# Space Launch Initiative/2nd Generation Reusable Launch Vehicle Program

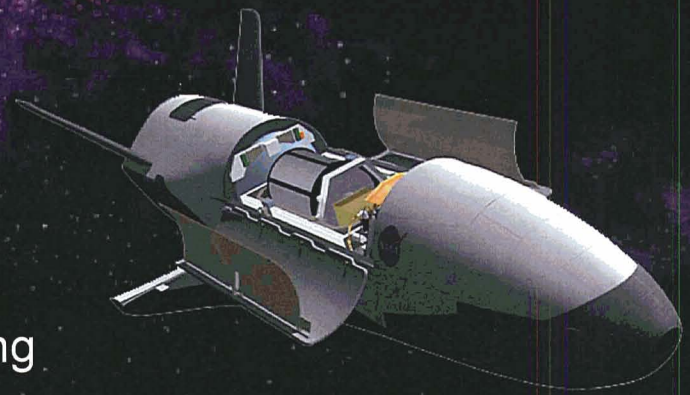


- **Position:**
  - Manager, 2000
  - Deputy Manager, 2001

- **Technical Accomplishments:**
  - Developed multi-Center/Agency Team
  - Chaired Source Evaluation Board for $1B Procurement
  - Developed Acquisition Strategies
  - Implemented Earned Value Management
  - Served as NASA Lead for Joint NASA/Air Force Study

**Management Lesson:**
***Vision must come before mission, or else a jobs program for Centers.***

# X-37



- **Position:**
  - Manager, 2003
- **Technical Accomplishments:**
  - Performed Comprehensive Project Planning
  - Established Baseline
  - Documented Lessons Learned
  - Team put project on track to flight test
  - Transitioned effort to DARPA partner

**Management Lesson:**
***Small design details can get MAJOR senior management attention.***

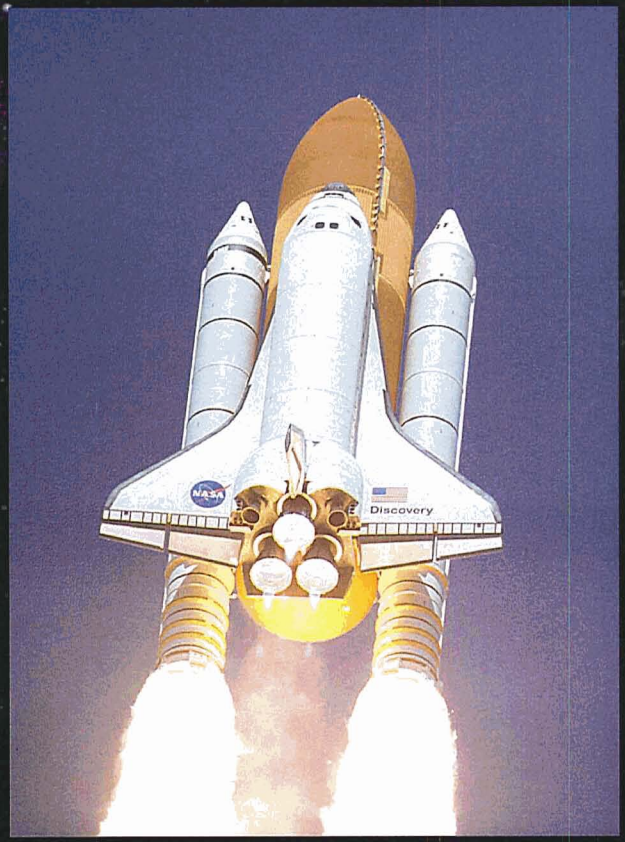
# Constellation
*(Pre Dr. Griffin)*

- **Position:**
  - MSFC Core Alignment Team, 2004
  - Exploration Systems Project Constellation (HQ), 2004

- **Technical Accomplishments:**
  - Participated in Major MSFC Reorganization
  - Initiated Project Constellation Systems Engineering and Integration Activities

**Management Lesson:**
***Be willing to do the "right" thing.***

# Safety & Mission Assurance




- **Positions:**
  - Deputy Director for Program Assurance, 2004
  - MSFC Assistant Ombudsman, 2004
- **Technical and Programmatic Objectives:**
  - Return the Shuttle to Safe Flight
  - Ensure Shuttle Propulsion Efforts Deliver Technical Excellence

**Management Lesson:**
***Communicate in one language; be ready to interpret.***

# Exploration Launch Projects

- **Position:**
  - Deputy Director, 2005-Present

- **Technical and Programmatic Objectives:**
  - Developed a Nationwide Team
  - Performed Analysis Based on the Exploration Systems Architecture Study Point of Departure Designs
  - Completed Ares I Crew Launch Vehicle System Requirements Review
  - Completed Ares V Cargo Launch Vehicle Design Analysis Cycles

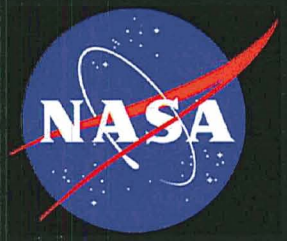

**Management Lesson:**

***Understand and work toward the "win/win"; look for solutions beyond the challenge.***

# An Approach To Project Success: Communicate, Communicate, Communicate


## *Effectively Managing the Breadth of External Relations Is Imperative.*

- Define and Manage Requirements
- Add Value to Create Traction and Momentum
- Reduce Technical and Programmatic Risks
- Keep Resources Flowing
- Promote Mission Success
- Always Do the Right Thing and Make Sure to Communicate With Customers
- Understand Where to Be Flexible

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